

STATE OF CALIFORNIA

Highway De-icing Sand/Cinder Specifications

Different types of de-icing material are required in different locations because of varying road conditions, weather, and environmental considerations. There are seven types of specification, A, A1, A2, B, C, D, and G. See each location on the contract price pages for the specific type of specification required. All material is subject to inspection and acceptance by State Personnel. Conformance to the requirements will be determined by the following:

- California Test 202 – Method of Tests for Sieve Analysis of Fine and Course Aggregates.
- California Test 217 – Method of Test for Sand Equivalent.
- California Test 229 – Method of Test for Durability Index.

1. Specification A - Sand:

Material must have sand equivalent of 70 minimum and durability index of 55 minimum. Material must conform to the following grading:

<u>SIEVE SIZE</u>	<u>PERCENTAGE PASSING</u>
3/8"	100%
#4	90-100%
#8	35-87%
#200	0-5%

A moisture content of 5% or less is requested. For payment purposes, reductions will be made for the weight of moisture in excess of 5%. Pit or delivery samples will be taken by a State Representative to determine moisture content and conformity to specifications. Sand which does not meet the following qualifications will be unacceptable:

- a. Must meet the above grading and durability specifications.
- b. Moisture content must be low enough so that the sand will not freeze in the truck or the sander.
- c. Must not contain frozen lumps larger than one (1) inch in size.
- d. Sand must be suitable for de-icing highway.

2. Specification A1 - Sand:

Material shall be clean washed sand, free from clay or organic material. Material must have a sand equivalent of 75 minimum and a durability index of 55 minimum. Material must conform to the following grading:

<u>SIEVE SIZE</u>	<u>PERCENTAGE PASSING</u>
3/8"	100%

#8	35-87%
#50	10-30%
#200	0-10%

A moisture content of 5% or less is requested. For payment purposes, reductions will be made for the weight of moisture in excess of 5%. Pit or delivery samples will be taken by a State representative to determine moisture content and conformity to specifications. Sand which does not meet the following qualifications will be unacceptable:

- Must meet the above grading and durability specifications.
- Moisture content must be low enough so that the sand will not freeze in the truck of the dander.
- Must not contain frozen lumps larger than one (1) inch in size.
- Sand must be suitable for de-icing highway.

3. Specification A2 - Sand:

Material shall be clean washed sand, free from clay or organic material. Material must have a sand equivalent of 75 minimum and a durability index of 55 minimum. Material must conform to the following grading:

<u>SIEVE SIZE</u>	<u>PERCENTAGE PASSING</u>
3/8"	100%
#8	35-87%
#50	0-30%
#200	0-5%

A moisture content of 5% or less is requested. For payment purposes, reductions will be made for the weight of moisture in excess of 5%. Pit or delivery samples will be taken by a State representative to determine moisture content and conformity to specifications. Sand which does not meet the following qualifications will be unacceptable:

- Must meet the above grading and durability specifications.
- Moisture content must be low enough so that the sand will not freeze in the truck of the sander.
- Must not contain frozen lumps larger than one (1) inch in size.
- Sand must be suitable for de-icing highway.
- A certificate of compliance with the specification is to be provided for each day's delivery, regardless of the number of deliveries that occur that day.

4. Specification B - Sand:

Material must have sand equivalent of 70 minimum and durability index of 55 minimum. Material must conform to the following grading:

<u>SIEVE SIZE</u>	<u>PERCENTAGE PASSING</u>
3/8"	100%
#4	90-100%
#200	0-5%

A moisture content of 5% or less is requested. For payment purposes, reductions will be made for the weight of moisture in excess of 5%. Pit or delivery samples will be taken by a State Representative to determine moisture content and conformity to specifications. Sand which does not meet the following qualifications will be unacceptable:

- Must meet the above grading and durability specifications.
- Moisture content must be low enough so that the sand will not freeze in the truck or the sander.
- Must not contain frozen lumps larger than one (1) inch in size.
- Sand must be suitable for de-icing highway.

5. Specification C – Cinders:

Material must be cinders and conform to the following grading:

<u>SIEVE SIZE</u>	<u>PERCENTAGE PASSING</u>
3/4"	100%
3/8"	85-100%
#4	40-65%
#200	0-5%

A moisture content of 5% or less is requested. For payment purposes, reductions will be made for the weight of moisture in excess of 5%. Pit or delivery samples will be taken by a State Representative to determine moisture content and conformity to specifications. Cinders which do not meet the following qualifications will be unacceptable:

- Moisture content must be low enough so that the cinders will not freeze in the truck or the sander.
- Must not contain frozen lumps larger than one (1) inch in size.
- Cinders must be suitable for de-icing highway.
- The weight per cubic foot shall be within the range of 40-70 pounds.

6. Specification D – Cinders:

Material must be cinders and conform to the following grading:

<u>SIEVE SIZE</u>	<u>PERCENTAGE PASSING</u>
1/2"	100%
3/8"	90-100%
#4	5-30%

#8	0-10%
#16	0-5%
#200	0-2%

For cinder sources in the clear lake area, material must be cinders and conform to the following grading:

<u>SIEVE SIZE</u>	<u>PERCENTAGE PASSING</u>
1/2"	100%
3/8"	90-100%
#4	5-85%
#8	0-65%
#16	0-55%
#200	0-15%

A moisture content of 5% or less is requested. For payment purposes, reductions will be made for the weight of moisture in excess of 5%. Pit or delivery samples will be taken by a State Representative to determine moisture content and conformity to specifications. Cinders which do not meet the following qualifications will be unacceptable:

- a. Moisture content must be low enough so that the cinders will not freeze in the truck or the sander.
- b. Must not contain frozen lumps larger than one (1) inch in size.
- c. Cinders must be suitable for de-icing highway.
- d. The weight per cubic foot shall be within the range of 40-70 pounds.

7. Specification G – Sand:

Specification G is applied to the locations below:

C-1 Truckee	C-2 Castle Peak	C-3 Floriston
C-4 Kingvale	C-5 Tahoe City	C-6 Gold Run
C-7 20/80 Jct.	C-8 Whitmore	C-9 Sierraville
C-10 Downieville	C-10A Gold Lakes	C-11 Nevada City
C-13 Grey Bar	C-15 Camino	C-16 Riverton
C-17 Kyburz	C-18 Echo Summit	C-19 S. Lake Tahoe
C-20 Placerville	C-22 Chico-Forest Ranch	
C-23 Willows	C-24 Chico MS	

Material shall be clean washed sand, free from clay or organic material. Material shall meet the following requirements:

<u>TEST</u>	<u>CTM</u>	<u>VALUE</u>
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Sand Equivalent (SE)	217	75 min
Durability Fine (DF)	229	55 min

The material shall conform to the following grading, as measured by CTM 202:

<u>SIEVE SIZE</u>	<u>PERCENTAGE PASSING</u>
1/4"	93-100%
#8	40-80%
#16	15-70%
#50	0-20%
#200	0-3%

For locations C-1 (Truckee), C-5 (Tahoe City), C-18 (Echo Summit), and C-19 (South Lake Tahoe), the maximum total phosphorous content shall be 10 ppm.

For locations where a moisture content of up to 10% is allowed, sand may be rejected if the moisture content exceeds 10%. For payment purposes, reductions will be made for the weight of moisture in excess of 5%. See "Moisture Content Penalty Assessment" for additional information. Pit or delivery samples will be taken by a State Representative to determine moisture content and conformity to specifications. Sand that does not meet the following qualifications will be unacceptable:

- a. Must meet the above grading and durability specifications.
- b. Moisture content must be low enough so that the sand will not freeze in the truck or the sander.
- c. Moisture content:
 - i. Less than 5% for these locations:
C-1 Truckee, C-2 Castle Peak, C-3 Floriston, C-4 Kingvale, C-5 Tahoe City, C-6 Gold Run, C-7 20/80 Jct., C-8 Whitmore, C-9 Sierraville, C-10 Downieville, C-10A Gold Lakes, C-17 Kyburz, C-18 Echo Summit, and C-19 S. Lake Tahoe
Sand with moisture content of 5% or greater will be rejected.
 - ii. Less than 10% for all other noted locations for Specification G.
- d. Must not contain frozen lumps larger than one (1) inch in size.
- e. Sand must be suitable for de-icing highways.
- f. Color: For locations C-13 (Grey Bar), C-15 (Camino), C-16 (Riverton), C-17 (Kyburz), C-18 (Echo Summit), C-19 (South Lake Tahoe), and C-20 (Placerville), sand shall not be the color black or dark gray when material is wet or dry.
- g. A Certificate of Compliance with the specification is to be provided with each delivery.